

Amendments to the Claims

The following listing of claims replaces all prior versions of the claims and all prior listings of the claims in the present application.

1-11. (canceled)

12. (new) A system for sensing at least one characteristic parameter of a tyre fitted to a vehicle, comprising:

a movable unit; and

a fixed unit;

wherein the movable unit is combined with the tyre,

wherein the movable unit comprises:

a device for sensing the at least one characteristic parameter;

a device for transmitting a signal out of the tyre; and

a device for generating electrical energy;

wherein the signal relates to the at least one characteristic parameter,

wherein the fixed unit is combined with the vehicle,

wherein the fixed unit comprises a device for receiving signals from the movable unit,

wherein the electrical energy generating device is capable of supplying electrical energy to the sensing device,

wherein the electrical energy generating device is capable of supplying electrical energy to the transmitting device, and

wherein the electrical energy generating device comprises a capacitor that charges itself with electrical energy in response to mechanical stresses applied to the tyre.

13. (new) The system of claim 12, wherein the capacitor comprises:

a fixed plate; and

a movable plate;

wherein the fixed plate and the movable plate move with respect to each other in response to the mechanical stresses.

14. (new) The system of claim 13, wherein a distance between the fixed plate and the movable plate can vary in response to the mechanical stresses.

15. (new) The system of claim 13, wherein the fixed plate and the movable plate are connected to each other by a pair of springs.

16. (new) The system of claim 13, wherein the fixed plate is connected to a fixed support, and

wherein the movable plate is connected to a movable support.

17. (new) The system of claim 13, wherein movement of the movable plate is bounded by a pair of end-stop elements.

18. (new) The system of claim 12, wherein the sensing device, the transmitting device, and the generating device are produced on a substrate.

19. (new) The system of claim 18, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

20. (new) The system of claim 18, wherein a processing unit is also produced on the substrate.

21. (new) The system of claim 20, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

22. (new) The system of claim 18, wherein a memory device is also produced on the substrate.

23. (new) The system of claim 22, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

24. (new) The system of claim 18, wherein an electrical energy distributing device is also produced on the substrate.

25. (new) The system of claim 24, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

26. (new) The system of claim 18, wherein a processing unit and a memory device are also produced on the substrate.

27. (new) The system of claim 26, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

28. (new) The system of claim 18, wherein a processing unit, a memory device, and an electrical energy distributing device are also produced on the substrate.

29. (new) The system of claim 28, wherein the movable unit is produced by micro-electro-mechanical systems (MEMS) technology.

30. (new) A movable unit for sensing at least one characteristic parameter of a tyre fitted to a vehicle, comprising:

a device for sensing the at least one characteristic parameter;

a device for transmitting a signal out of the tyre; and

a device for generating electrical energy;

wherein the signal relates to the at least one characteristic parameter,

wherein the electrical energy generating device is capable of supplying electrical energy to the sensing device,

wherein the electrical energy generating device is capable of supplying electrical energy to the transmitting device, and

wherein the electrical energy generating device comprises a capacitor that charges itself with electrical energy in response to mechanical stresses applied to the tyre.

31. (new) A vehicle wheel, comprising:

a tyre;

a supporting rim for the tyre; and

a movable unit combined with the tyre;

wherein the movable unit comprises:

a device for sensing at least one characteristic parameter of the tyre;

a device for transmitting a signal out of the tyre; and

a device for generating electrical energy;

wherein the signal relates to the at least one characteristic parameter,

wherein the electrical energy generating device is capable of supplying electrical energy to the sensing device,

wherein the electrical energy generating device is capable of supplying electrical energy to the transmitting device, and

wherein the electrical energy generating device comprises a capacitor that charges itself with electrical energy in response to mechanical stresses applied to the tyre.